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ABSTRACT

This paper studies the effect of participation in intercollegiate athletics on student-athlete grade point averages. The study was done to address critics of intercollegiate athletics who charged that participation in athletics hinders the academic performance of the student athlete, while coaches and student athletes themselves often empirically observe better academic performance in-season than out-of-season. A comparison of in-season with out-of-season grade point averages (GPA) in a sample of 74 student athletes at Trenton State College, New Jersey, during the 1988-89 academic year showed no significant difference between in-season and out-of-season grades among players (male and female) defined as eligible for the study. It is suggested that these study results can be useful to coaches planning academic programs for their players. Contains a 25-item bibliography. (Author/GLR)

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A COMPARISON OF STUDENT-ATHLETES' GRADES IN-SEASON VS. OUT-OF-SEASON AT TRENTON STATE COLLEGE

Presented to:
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Introduction to Research
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ABSTRACT

This paper studies the effect of participation in intercollegiate athletics on student-athlete grade point averages. A comparison of in-season with out-of-season GPA's in a sample of 74 student-athletes at Trenton State College during the 1988-89 academic year showed no significant difference between in-season and out-of-season grades among players defined as eligible for the study. Recommendations can be useful to coaches planning academic programs for their players.

Introduction and Objectives

This study grew out of a shared interest by the co-authors in examining academic performance for in-season student-athletes, in hopes of shedding some light on this controversial topic. Critics of intercollegiate athletics charge that participation in athletics hinders the academic performance of the student-athlete, particularly that of freshmen. On the other hand, coaches and players themselves often empirically observe <u>better</u> performance academically in-season versus out. This study can be useful in providing information for coaches who are planning academic programs for their student-athletes.

The study was limited to a cluster sample drawn from the accessible population of Trenton State College student-athletes. Because the admissions profile of the college is relatively high (1050 SAT's and top 10% of high school class is the desired target), and because as a Division III institution, Trenton State offers no athletic scholarships, generalizability of results may be limited. However, the state mandated Educational Opportunity Fund (EOF) admissions and special admits allocated to each team somewhat mitigate

this high academic profile. No information on admissions categories for student-athletes was included in this study.

Because of the action research nature of this quasi-experimental study, certain other limitations are inherent in the project. Somewhat limited computer availability led to a slight compromise on the degree of statistical analysis performed. The definition of "eligibility" used for the study reduced an initial N of 114 to 74; thus we decided to try to account for those student-athletes not included in the original study. Because of time constraints, a full fledged analysis of the entire sample was impossible when combined with a thorough review of the literature. We thus dicided to split forces; I handled the bulk of the statistical analysis while my partner Joe Clifton conducted most of the review of the literature. Unfortunately, the Roscoe L. West Library at Trenton State did not have several of the journals in which the most promising articles were located, and we were unable to locate them.

Considering our mutual background and experiences as student-athletes, the co-authors were tempted to predict better <u>in-season</u> performance for athletes than out-of-season academic achievement. However, considering the aforementioned criticisms of college athletics which gave rise to the so-called "Proposition 48" which limits eligibility of below "standard" (700 SAT and 2.0 high school GPA), we decided on the following null hypothesis:

There will be no significant difference between student-athletes' in-season grades and their own out-of- season grades.

Review of the Literature

There has been much written on the performance of intercollegiate student-athletes. However, in our review of the literature available in ERIC (1969-1989 January), we were unable to locate a study comparing athletes in-season grades with their out-of-season grades; this may in part be due to our inability to locate some of the most promising journals. However, much has been written comparing the performance of athletes with the general student population. Between 1968 and 1973, 93% of male athletes at the University of California-Davis and 95% of male students (all regular admits) had a C average or better, while for specially admitted students, athletes were slightly (82% to 76%) more likely to achieve a C or better (Mackenzie, 1981).

While the UC-Davis study found comparable graduation rates for athletes and non-ahtletes, a dissenting opinion was registered in a review of two similar studies (Review, 1985). Because faulty data analysis made the validity of both studies (by the American College Testing Program and Advanced Technology Inc.) questionable, doubt is cast on the favorable comparisons of athletes' academic performance and graduation rate to those of regular students. Similarly, many studies question both the academic and social development of the student-athlte (Boland, 1987; Butler, 1987 in Boland). Even considering contrary opinions, a

strong recommendation is made to "provide special services that will help to mitigate and reduce the unique pressures engendered by the incompatibility of varsity athletics and academic demands."

Similar fears of inadequate academic skills and preparation for athletically gifted scholarship athletes led to Proposition 48 in 1986 (Lang, Dunham & Alpert, 1988). One source cited notes that "9% (206 of 2,227) of those freshmen student-athletes entering Division I football programs are ineligible to participate in their sport", because of Proposition 48 guidelines. However, the study notes that it is inappropriate to conclude that these variables "would singularly lead to academic success or that these variables are the only predictors for academic success by the freshman football athlete" (Cook and Mattley, 1984, in Lang et al.).

These findings are contradicted by an Iowa study which found that, of 78 high school graduating seniors receiving athletic scholarships in 1984, many would lose their scholarships unnecessarily under Proposition 48 guidelines (deLacey, 1985). While only 2.5% of those studied would be denied scholarships based on standardized test scores or high school GPA's, as many as 61% of females and 45% of males would be denied those scholarships based on non-fulfillment of Prop 48's "core course" requirements.

Method

The data was gathered in April 1990, based on records of student-athlete grade point averages during the 1988-1989 academic year (Fall and Spring semesters only). Records were made available by the Trenton State Athletic Director, football, men's basketball, and softball coaches, and Trenton State College department of Records and Registration, all on condition of strict anonymity of individual student's grades. From the accessible population of Trenton State student-athletes, a cluster sample of all football, soccer, and softball players was drawn.

This sample was selected in an attempt to minimize threats to the internal validity of the study. All team sports which span two semesters (men's and women's basketball, wrestling, men's and women's swimming, and gymnastics) were eliminated to prevent inaccurate classification of "control" (out-of-season) and "experimental" (in-season) grades. Teams which have had high rates of crossover because of traditional linkage despite being two distinct sports (ie. field hockey/lacrosse and track/cross country) were eliminated for similar reasons, as was men's baseball, which has a full Fall schedule to complement its regular Spring season. Teams which might tend to draw from exclusive socio-economic groups (ie. golf and tennis) were eliminated to prevent problems of differential selection. And club sports

(women's soccer, men's lacrosse) were eliminated not only because they lacked full intercollegiate standing, but also because of a lack of available grade records.

We were left with a cluster sample which represented both genders, teams whose "in-season" included only one semester but which took place both in Fall and Spring, and whose N would be large enough to offset the effects of experimental mortality. It should be noted, however, that both men's soccer and women's softball have a "second" season. Soccer practices approximately twice a week during the Spring (with games every other week on average); softball practices/plays 4 days a week during the Fall semester. Football is prohibited from practicing out-of-season by NCAA (National Collegiate Athletic Association) regulations, though players often weightlift regularly on their own out of season.

Defintion of eligibility for Study

By NCAA and NJAC (New Jersey Athletic Conference) regulations, student-athletes must take (attempt) 12 credit hours each semester, and must accumulate (pass) 24 credit hours during the academic year (September to August), in order to remain academically eligible to participate in intercollegiate athletics. In addition, Trenton State College defines a full-time student as one who takes (as opposed to earns) 12 credit hours in a given semester (discounting Summer session, where the standard is 6). For

this reason, we chose taking 12 credit hours in both Fall and Spring semesters as a prerequisite for eligibility for the study.

While the NCAA, NJAC, and Trenton State College all count the so-called "Basic Skills" courses towards athletic eligibility, we chose not to do so for the purposes of this study. These courses are required, non(graduation) credit courses for students who test below minimum proficiency levels in mathematics, English, or reading and study skills. Because these courses generally require less time and present less of an academic challenge than regular, credit earning courses, we felt that any student who attained athletic eligibility through inclusion of basic skills "credits" should be defined as non-elibible for our study. In addition, it was felt that a student who takes 9 regular credits and 3 basic skills credits in order to achieve athletic eligiblity is different from a typical "full time" student, and should be analyzed separately.

Several other complications arose in our definition of eligibility for the study. Many students took 12 or more credits, but passed less than 12. These were defined as eligible because they had a full course load all the way through the semester (and this may have contributed to their failure(s), and should be noted). Others began the term with 12 or more credit hours (this preserving athletic eligibility) but dropped or withdrew from courses during the term, thus finishing with less than 12 credit hours. They

were categorized as non-eligible, as their reduced course load might have allowed greater study time, inducing artificially inflated grades in their remaining courses, and thus posing a threat to internal validity through differential selection.

Another statistical oddity was the fact that some students earned more credits than they took! This was usually due to credits added for makeup work in courses retaken from the previous semester, which was added to the transcript at the end of the term in question. These students were defined as carrying as many credit hours as designated in the "credits taken" section of their transcript, and categorized accordingly.

For simplicity's sake, we used this measure as an absolute cut-off; any students listed with less than 12 credit hours in <u>either</u> the Fall 1988 or Spring 1989 "credits taken" section of their transcript were designated as non-eligibe for the study.

Additionally, 8 students out of the original N of 114 did not return for the Spring term for a variety of reasons, and therefore had no Spring grades to compare with their Fall grades. These students were thrown out of the study completely (see Table B). Out of the remaining N of 106, 40 students were designated as non-eligible, thus leaving an N of 74 student-athletes eligible for the study.

In order to counter this threat to internal validity posed by probable differential selection of subjects (since

a large number of those deemed non-eligible were likely to come from Basic Skills, and thus often from an EOF background), we decided to also analyze the "non-eligible" students separately (see Tables 2A, 2B) and combined with the eligible students (see Table 3A,3B).

To account for so-called "maturation" threats to internal validity, posed particularly by incoming freshmen's adjustment to college life, grades were analyzed by class both in-season versus out (see Table 4A) and Fall semester versus Spring semester (see Table 6). To account for differential selection by gender, students were analyzed accordingly (see Tables 5A, 5B). And, to account for differences in "intrumentation" caused by (presumably) lighter in-season course loads, tables of credit hours accompany all tables of grades except Fall vs. Spring semester grades.

The independent variable in this study is the status of season (in versus out), while the dependent variable is subject's GPA. Results were tabulated on modified Athletic Department record sheets (see Appendix A, original reasearch instrument; Appendix B, modified research instrument). Results included Fall and Spring term GPA'a, cumulative GPA's at the end of each term, and credit hours taken during each term. Any irregularities were noted in the "comments" section of the research instrument.

Results

Tables 1A and 1B represent analysis of the mean grade point average (by team and total), and mean credit hours taken (by team and total) of 74 student-athletes defined as eligible for this study. "Mean GPA-IN"- or X- represents team and total grade point averages in season (the "experimental group"). "Mean GPA-OUT- or Y- represents team and total grade point average out-of-season (the "control group"). Standard deviations were calculated for every mean score to help determine the degree of deviation of individual grade point averages from the mean. X-Y (X minus Y) represents (In-season Mean GPA) minus (Out-of-season Mean GPA), with the degree of probability (p) from a 2 tailed t-test indicating the relative likelihood that the results were due to chance. Table 1B indicates the mean of credit hours taken (by team and total) both in-season (X) and out-of-season (Y). The difference (X - Y) shows how many more (or fewer) credits were taken in-season compared with out-of-season. Again, p indicates the probability that these events occurred by chance, and standard deviations (SD) indicate the degree of deviation of individuals from the mean number of credit hours taken.

Tables 2A through 6 should be read in the same manner as Tables 1A and 1B, noting that the "A" tables denote a comparison of grade point averages, while the "B" tables represent a comparison of credit hours taken. Tables 2A and 2B compare statistics compiled on those students defined a "non-eligible" for the study, and are useful both in

assessing the effects of that group's exclusion from the principal study, and in analyzing the performance of these students in their own right. Tables 3A and 3B include all students (except the 8 thrown out because they had no Spring grades to serve as a basis for comparison), and demonstrate any change in results which might have occurred due to the exclusion of "non-eligible" students from the original study.

Tables 4A through 6 are included to help account for any possible extraneous or moderating variables which might have unduly influenced the results of the study. Tables 4A and 4B provide information which attempts to account for any threats to internal validity because of maturation of the subjectgs. Mean GPA's and Mean Credit hours are compared for eligible students (in-season versus out-of-season) by class and total. Note that Table 6 provides similar information, only the comparison is between Fall and Spring grade point averages, in order to measure particularly freshmen's academic achievement as they adjust to college life.

To calculate these grades, softball's GPA-IN (Spring semester) was entered under Spring grades, and GPA-OUT (Fall semester) was entered under Fall grades; for soccer and football, GPA-IN is the same as GPA-FALL, as both teams are in-season during the Fall semester. Thus, though the Totals section for Tables 1A, 4A, and 5A are the same, regardless of whether results are analyzed by team, class year, or

gender, the Totals for Table 6 are different, representing a different measure of Mean GPA. As noted, Tables 5A and 5B provide information to account for gender differences within the sample.

Tables A and B are designed to provide information on attrition, both during the school year, and at the end. Table A represents all students (eligible and non-eligible) with the exception of the 8 who were thrown out of the study. "Number of dismissals" (dismis.) represents the total number of players on a given team who were dismissed from Trenton State College for poor academic performance at the end of the academic year (5/25/89), or at midyear as noted. (%) is the percentage of members of each team (excepting the 8 thrown out of the study) who were dismissed. Table B describes the 8 players who were thrown out of the study. Included are the player's team, class, grade point average in the Fall, and reason for not returning during 1989.

Discussion

On the surface, our null hypothesis is validated. Of those students eligible for the study, the mean GPA in-season (2.499) was actually higher than the mean GPA out-of-season (2.46), though not significantly so. In a team by team analysis, both football players and softball players did better in-season (softball by .159 grade

points), while soccer players did worse in season (by .174 grade points). In no case was the team X - Y significant.

Upon further analysis, however, several things become apparent. First, "non-eligible" students (Table 2A) did worse in aggregate in-season; while not statistically significant at $p < .05$, this discrepancy approaches significance. Ironically, soccer players rejected for the "eligible" study did <u>better</u> in-season, thus not only contradicting their "eligible" counterparts, but also the other non-eligible members of the study (softball and football players). Second, in <u>all</u> cases (except ineligible soccer players who were identical in both semesters), student mean credit hours were lower in-season than out-of-season, whether the data was analyzed by team, by class, by gender, or in aggregate. In most cases, the difference was statistically significant at the $p < .05$ level. And third, the extraneous variables of class, gender, and semester did not appear to affect the subjects significantly in any case.

As this study focuses on those students defined as eligible, analysis of the non-eligible students will be brief. Clearly, these students appeared to be more adversely affected by the demands of varsity sports (except for the soccer players), though as noted, this trend was not statistically significant. However, because the aggregate results are significant at the $p < .10$ level for this group ($p = .0876$), it is clear that this group should be a measure

of concern for coaches, particularly since their mean GPA in-season (2.099) barely surpasses the 2.0 level required by the NCAA for continued eligibility. Clearly the soccer coach has reason for particular concern, as his "non-eligible" players' mean GPA is below 2.0 in-season, when they actually performed better academically!

For the purposes of determining the validity of the "eligible" group, Table 3A was included. In total, all 106 subjects performed slightly better out-of season (2.415 mean GPA) than in-season (2.378 mean GPA). Despite the slight shift in performance, however, in no case, whether by team or in total, was the difference statistically significant. Thus it appears that our null hypothesis remains valid for Trenton State student-athletes.

One important caveat should be added to the previous conclusion, however. It was noted that in all analyses (except non-eligible soccer players), mean credit hours taken in-season were fewer than mean credit hours taken ou-of-season, and often significantly so. One interpretation of this is the obvious: student-athletes (with or without coaches' guidance) consistently chose to take fewer credit hours in-season. This is a logical step, as the demands of varsity athletics at the intercollegiate level are such that the student-athlete is often sacrificing 3-4 hours per day (including practice, dressing, undressing and showering) and perhaps more when travel to away games is factored in. Another possible conclusion is that the reason

that these subjects performed about as well in-season as out-of-season is precisely because they took fewer credit hours. Barring further correlational analysis of the data, this conclusion can only be postulated.

One other point of statistical analysis should also be made. In studying both grade point averages and credit hours taken, a pattern develops in which the standard deviations are often higher out-of-season than in. This is true both for eligible grade totals (.602 in; .716 out), and all grades (.674 in; .725 out). It is likewise true of total eligible credit hours (2.75 in; 2.815 out).

This lower deviation from the mean for in-season grades probably indicates both a greater effort to "buckle down" (perhaps to preserve athletic eligibility) by the "poorer" students in-season, and greater demands on the "better" students in-season. Conversely, the higher standard deviation out-of-season (particularly when accompanying a lower mean GPA), may indicate a greater tendency to "slack off" out-of-season for some (presumably poorer students, and enhanced performance due to greater availability of study time for the more motivated students (or at least the high achieving, motivated students). For eligible subjects, the tendency seems more likely to be towards slacking off, since the mean GPA out-of-season fell slightly. For credit hours, this pattern of increased standard deviation out-of-season probably reflects the tendency to "load up" on courses out-of-season, particularly when accompanying a

significantly greater number of credit hours taken out-of-season.

Once again, with the exception of credit hours taken, the other possible extraneous variables studied seem not to have affected the study significantly. When examining the roster of "eligible" soccer players, we found that 10 of the 14 players were freshmen. Since eligible soccer players' grades were worse in-season by .174 grade points, a natural conclusion is that this result was largely due to the heavy preponderance of freshmen on the 1988 soccer team (15 of 22 in all). The data in Tables 4A and 6 bely this conclusion. Interestingly, when analyzed by class, eligible freshmen did <u>better</u> in-season than out by .172 grade points, and their X - Y most closely approached statistical significance of all the classes (though not achieving it). Though not statistically significant, tHe trend appears to be that the younger a student athlete, the <u>better</u> he/she does in-season as compared with out-of-season. One possible explanation for this phenomenon would be that freshmen concentrate better in-season out of fear of failure, while upperclassmen concentrate worse, perhaps because of overconfidence. Table 6 shows that freshmen and seniors did <u>better</u> in the Fall semester, perhaps because of, in the former case, fear of academic failure, and in the latter, fear of losing eligibility during the (in) season (for football and soccer players) or for the upcoming season (for softball players).

As noted, both male and female student-athletes performed better in-season than out, though in neither case significantly so. It should be noted that even an apparantly "high" difference in mean GPA's achieved by the females in-season over out is not nearly enough to affect an individual grade on the 4 point system used by Trenton States College, in which no subdivisions (= or -) are used. The student only receives an A (4.0), B (3.0), C (2.0), and so on, with no provision (presently) made for anything in between. Thus, any results in our study, even the -.174 registered by eligible soccer players, will rarely be enough to affect a grade. Not only are the differences in GPA's in vs. out not statistically significant, but also they will rarely be significant in practice.

Tables A and B were included merely to supplement information in this study; it is hard to draw many inferences from them as stated. Empirically one might guess that an 8% academic dismissal rate for the football team might be high (or low!), but such conjectures are meaningless without comparable statistics for the general population. Likewise, it is logical to conclude that the mean GPA of those students thrown out of the study would be low (1.83) considering their reasons for not returning; even graduating seniors are unlikely to perform well in a 9th semester in which their athletic eligibility- and college career- is about to end.

In all, our findings were consistent with our hypothesis, with the noted caveat concerning credit hours. Interestingly, our study in some ways refuted the findings of the several articles previously cited. In contrast to the assumptions behind Proposition 48, <u>eligible</u> freshmen student-athletes at Trenton State performed better in their first (Fall) semester of college, as well as better in-season compared with out-of-season. However, those students most likely to be EOF and special admits did worse in-season at Trenton State (assuming that most Basic Skills students fall into one of those two categories, and were grouped in the "non-eligible" category). Unfortunately, we did not have access to admissions data necessary to compare the performance of Trenton State athletes of similar profile to Proposition 58 casualties at Division I schools.

Our findings seem to lend credence to those of the UC-Davis study. The connection between comparable in-season and out-of-season student-athlete grades and comparable results of academic achievement for athletes and non-athletes, seems obvious. If an athlete can perform academically as well as a "regular" student, then it stands to reason that he/she can perform as well in-season as out, since these two studies seem to indicate no negative effects of participation in intercollegiate athletics on student-athletes' grades. One cautionary note should certainly be added, however; atletes' in-season academic

performance is not adversely affected when they reduce their credit load.

One tailed t-tests were performed on eligible, non-eligible, and "all" grade categories (except for non-eligible totals, which might have proved significant!). Because those performed showed no change in status of statistical significance, they were not included in the results, but can be found in the supplement to this paper. The lack of the vital 1 tailed t-test only demonstrates anew our need for greater computer access time!

Conclusions/Recommendations

The primary conclusion of our study is that Trenton State College student-athletes showed no significant difference between in-season and out-of-season grade point averages when carrying reduced credit loads in-season. Analysis of combined "eligible" and non-eligible grades ("all grades") showed no significant change in results, which confirms the internal validity of the study. So too do the results of the analyses by gender, class, and semester.

Inevitably, the strict attempt to preserve the internal validity of the study had adverse effects on its external validity. Without demographic or extensive admissions data on the composition of the cluster sample or the accessible population, the generalizability of this study to the target population of all student-athletes is somewhat limited.

This study could therefore be expanded to include that missing data, which would in turn give a better measure of its population and ecological validity. From the admissions profile given, however, it appears unlikely that the results will be broadly generalizable even then.

There is also a clear need of further study to explore the composition of the "non-eligible" group, both to aid Trenton State coaches in studying the academic programs of these student-athletes, and to provide clearer research data on the appropriateness of Proposition 48.

Finally, this study itself could be improved through greater statistical analysis (read: more computer time!). Aside from the need for more 1 tailed t-tests, a correlational study should be performed on the effects of credit hour reduction on student-athlete in-season grades.

With these reservations and recommendations noted, it is safe to conclude that student-athletes at Trenton State College do not suffer academically from participation in intercollegiate athletics, provided that they are guided in designing a realistic credit load in-season.

TABLE 1A
ELIGIBLE GRADES

X = Mean GPA In-Season
Y = Mean GPA Out-Season

Team	N	X	SD	Y	SD	X-Y	p(2 tail)
Football	47	2.43	536	2.372	.76	.058	.592
Soccer	14	2.261	514	2.435	.524	-.174	.2968
Softball	13	2.962	.699	2.803	.673	.159	.5021
Total	74	2.499	.602	2.46	.716	.04	.5938

TABLE 1B
ELIGIBLE CREDIT HOURS

X = Mean Credit Hours In-Season
Y = Mean Credit Hours Out-Season

Team	N	X	SD	Y	SD	X-Y	p(2 tail)
Football	47	13.766	1.722	14.426	2.072	-.66	.0746
Soccer	14	12.286	1.069	13.857	1.562	-1.571	.0018*
Softball	13	14.692	1.251	16.154	1.725	-1.462	.0055*
Total	74	13.649	1.7	14.622	2.045	-.973	.0003*

TABLE 2A
NON-ELIGIBLE GRADES

X = Mean GPA In-Season
Y = Mean GPA Out-Season

Team	N	X	SD	Y	SD	X-Y	p(2 tail)
Football	18	2.079	.807	2.323	.736	-.243	.1313
Soccer	5	1.952	.537	1.908	.232	.054	.8557
Softball	9	2.219	.804	2.518	.914	-.299	.3293
Total	32	2.099	.754	2.313	.747	-.214	.0876

TABLE 2B
NON-ELIGIBLE CREDIT HOURS

X = Mean Credit Hours In-Season
Y = Mean Credit Hours Out-Season

Team	N	X	SD	Y	SD	X-Y	p(2 tail)
Football	18	9.944	2.313	11.278	2.653	-1.333	.1813
Soccer	5	10.8	3.701	10.8	2.683	0	----
Softball	9	9.889	4.285	11.0	3.606	-1.111	.6411
Total	32	10.062	3.089	11.125	2.86	-1.062	.244

* Statistical Significance at p<.05

TABLE 3A
ALL GRADES

X = Mean GPA In-Season
Y = Mean GPA Out-Season

Team	N	X	SD	Y	SD	X-Y	p(2 tail)
Football	65	2.342	.64	2.358	.748	-.017	.8268
Soccer	19	2.18	.524	2.296	.517	-.116	.3853
Softball	22	2.658	.816	2.686	.773	-.028	.8786
Total	106	2.37	. 674	2.415	.725	-.037	.5645

TABLE 3B
ALL CREDIT HOURS

X = Mean Credit Hours In-Season
Y = Mean Credit Hours Out-Season

Team	N	X	SD	Y	SD	X-Y	p(2 tail)
Football	65	12.708	2.554	13.554	2.64	-.846	.0254*
Soccer	19	11.895	2.079	13.053	2.297	-1.158	.1144
Softball	22	12.727	3.706	14.045	3.658	-1.318	.1757
Total	106	12.566	2.75	13.566	2.815	-1	.0024*

TABLE 4A
ELIGIBLE GRADES BY CLASS

X = Mean GPA In-Season
Y = Mean GPA Out-Season

Class	N	X	SD	Y	SD	X-Y	p(2 tail)
Freshmen	29	2.413	.621	2.241	.814	.172	.1728
Sophmore	27	2.673	.621	2.606	.622	.067	.487
Junior	12	2.374	.559	2.522	.509	-.148	.4627
Senior	6	2.383	.434	2.755	.812	-.372	.3595
Total	74	2.499	.602	2.46	.716	.04	.5938

TABLE 4B
ELIGIBLE CREDIT HOURS BY CLASS

X = Mean Credit Hours In-Season
Y = Mean Credit Hours Out-Season

Class	N	X	SD	Y	SD	X-Y	p(2 tail)
Freshmen	29	13.379	1.801	14.448	1.882	-1.069	.008*
Sophmore	27	14.259	1.631	14.667	2.13	- .407	.3423
Junior	12	13.167	1.267	14.75	2.137	-1.583	.027*
Senior	6	13.167	1.835	15.0	2.683	-1.833	.2022
Total	74	13.649	1.7	14.622	2.045	- .973	.0003*

* Statistical Significance at p<.05

TABLE 5A
ELIGIBLE GRADES BY GENDER

X = Mean GPA In-Season
Y = Mean GPA Out-Season

Gender	N	X	SD	Y	SD	X-Y	p(2 tail)
Male	61	2.4	.536	2.386	.709	.014	.3531
Female	13	2.962	.699	2.803	.673	.159	.5021
Total	74	2.499	.602	2.46	.716	.04	.5938

TABLE 5B
ELIGIBLE CREDIT HOURS BY GENDER

X = Mean Credit Hours In-Season
Y = Mean Credit Hours Out-Season

Gender	N	X	SD	Y	SD	X-Y	p(2 tail)
Male	61	13.426	1.707	14.295	1.969	-.869	.0047*
Female	13	14.692	1.251	16.154	1.725	-1.462	.0055*
Total	74	13.649	1.7	14.622	2.045	-.973	.0003*

TABLE 6
FALL vs.SPRING GRADES BY CLASS

X = Mean GPA Fall
Y = Mean GPA Spring

Class	N	X	SD	Y	SD	X-Y	p(2 tail)
Freshmen	29	2.373	.548	2.282	.871	.091	.4779
Sophmore	27	2.58	.638	2.699	.601	-.119	.2089
Junior	12	2.287	.576	2.518	.464	-.231	.1791
Senior	6	2.647	.349	2.492	.891	.155	.7132
Total	74	2.471	.578	2.489	.735	-.018	.8062

*Statistical Significance at p<.05

TABLE A
ACADEMIC DISMISSALS 5/25/89

	ALL			ELIGIBLE		
Team	N	dismis.	%	N	dismis.	%
Football	65	5^	8	47	3^	6
Soccer	19	1+	5	14	0	0
Softball	22	0	0	13	0	0
Total	106	6	6	74	3	4

TABLE B
GRADES THROWN OUT OF STUDY

X = Semester GPA In
Y = Semester GPA Out

Team	Class	X	Y	Reason
Football	Senior	2.38	---	graduated
Football	Freshmen	----	---	all P/F classes
Football	Freshmen	1.4	---	dropped out
Football	Sophmore	2.5	---	transferred out
Football	Senior	2.33	---	graduated
Soccer	Sophmore	2.25	---	dropped out
Soccer	Freshmen	1.76	---	dropped out
Soccer	Freshmen	0.2	---	dismissed*
Total	8	1.83	---	8

P/F = Pass/Fail
^ = also 1 mid year dropouts
+ = also 2 mid year dropouts
* = See Table A

ORIGINAL RESEARCH INSTRUMENT

Intercollegiate Athletics
Trenton State College
Student Grade Report

Team_____ Sem/Year_____

Name(Last, First)	S.S.#	Cl.	Maj.	Sem. GPA	Cum. GPA	Yrs. On Team	Category	Comments
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								
13.								
14.								
15.								
16.								
17.								
18.								
19.								
20.								
21.								
22.								

Ave. Sem GPA _____ Ave. Cum CPA_____

TYPE ALL DATA
Class: year of graduation Yrs. on team: include current year
Category: R-regular admit, C-Change, St-Special Talent

MODIFIED RESEARCH INSTRUMENT

Intercollegiate Athletics
Trenton State College
Student Grade Report

Team_____ Sem/Year_____

CLASS	FALL Sem. GPA	FALL Cum. GPA	Credits Taken		SPRING Sem. GPA	SPRING Cum. GPA	Credits Taken		Comments
1.									
2.									
3.									
4.									
5.									
6.									
7.									
8.									
9.									
10.									
11.									
12.									
13.									
14.									
15.									
16.									
17.									
18.									
19.									
20.									
21.									
22.									

Ave. GPA _____ Ave. CPA _____

TYPE ALL DATA

Cum.: Cumulative GPA
Sem: Semester GPA

NOTE: Softball Fall GPA=GPA OUT
Softball Spring GPA= GPA IN

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ERIC Descriptors used in this search included: College Students, College Athletics, Grades, Extracurricular Activities.